

Learning More about Wisconsin's Changing Landscape

A challenge for all of us

By Dreux J. Watermolen, Land Use Team Leader, Wisconsin Department of Natural Resources

Development changing North's lakes

Town sues over annexation

Landowners explore options

Officials seek land use compromise

City gives controversial development go-ahead

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Headlines like these appear daily in newspapers throughout Wisconsin. The stories that run beneath them carry detailed accounts of the heartfelt emotions and deeply held beliefs that underlie the land use decisions Wisconsinites face. When people talk about land use, a wide variety of viewpoints and some strongly worded opinions quickly surface. Understanding these conflicting viewpoints, investigating the issues at the heart of the matter, and seeking common ground are important steps in helping shape future landscapes. The resources in this issue of *EE News* will help you and your students explore some of the countless land use issues facing communities throughout our state.

Elected officials continually propose changes to land use planning, zoning, annexation, and related laws. With the 1997–1999 biennial budget bill, the State Legislature created the Wisconsin Land Council. This body, which is appointed by the Governor, is charged with proposing state land use goals, identifying priorities to address those goals, and recommending legislation to implement the priorities. The council is also charged with overseeing two planning grant programs that support local planning. More recently, the Legislature took steps to update Wisconsin's planning statutes (see related story on pages 2–3). These new laws define the contents of a comprehensive land use plan and more closely link various regulations and growth management tools to comprehensive plans. Undoubtedly, many more

proposals will be put forth as the Legislature conducts its business. Such proposals provide excellent opportunities for students to examine the legislative process and its relationship to the management of the natural environment.

One of the most difficult challenges decision-makers face is balancing public and private rights. Protection of private property is a concept deeply rooted in the U.S. Constitution. Yet, government exists to serve the greater good, which sometimes means limiting individual rights. This is, in part, why the implementation of many land use regulations is so contentious. Understanding the nature of "takings" and the court decisions related to private property rights is one step towards achieving the necessary balance. Inquiry into the role of the courts and the effects of "takings" laws gives students a chance to develop their own opinions on what the next steps ought to be to best accomplish this balancing act.

Learning about land use issues is central to understanding many of the environmental issues facing Wisconsin. That is why we featured land use in a previous issue of *EE News* (Winter 1998). In this issue, we expand on this theme. We provide updates on recent legislation, examine the balance local officials seek between protecting individual rights and achieving the common good, outline some classroom activities, and identify additional resources. Exploring land use issues provides an excellent opportunity to help students learn *how* to think *not what* to think. This is not only a basic of environmental education, but also a requisite for responsible citizenship. Environmental educators are in a key position to help prepare the next generation of decision-makers. We hope the resources in this issue help you do just that. ♦

"Each ecosystem has intrinsic value. Just as a country treasures its finite historical episodes, classic books, works of art, and other measures of national greatness, it should learn to treasure its unique and finite ecosystems, resonant to a sense of time and place."

—E.O. Wilson, Harvard Scientist and Author



Comprehensive Planning and Smart Growth Legislation

by Matthew Murrell, Program and Planning Analyst, Wisconsin Department of Natural Resources

Wisconsin is growing faster than most states in the Midwest and the increased need for housing and services can put a strain on community resources. Recent legislation signed by Governor Thompson emphasizes the importance of community planning in meeting future needs. Important additions and changes to Wisconsin law were made concerning comprehensive planning and what is being called "Smart Growth." These changes will help communities adapt to the demands of the future.

Communities develop plans to preserve desired features and to minimize disruptions from expansion. Comprehensive plans outline strategies to guide communities through growth and development. Previous legislation gave communities only permission to plan, but the new law creates a detailed comprehensive plan definition for how to assess past, present and future needs. The plan must contain nine elements. They are:

- 1) Issues and opportunities—Background information on the local government unit and a statement of its objectives, policies, goals, and programs to guide growth for the next 20 years;
- 2) Housing—Outline of the unit's existing housing stock and its programs to promote development of a range of housing choices;
- 3) Transportation—Plans for the future development of various modes of transportation within the unit and how these will relate to regional and state transportation plans;
- 4) Utilities and community facilities—Plans for future development of a variety of utilities and community facilities, including sewers, water supply, solid waste disposal, water treatment, recycling, parks, telecommunications, power plants and transmission lines, cemeteries, health care, police and fire service, libraries, and schools;

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Carrie Morgan, managing editor

Jeanne Gomoll, graphic designer

This newsletter is available in alternate format upon request. Please call Carrie at 608-267-5239.

- 5) Agricultural, natural, and cultural resources—Compilation of policies and programs for the conservation and effective management of natural resources, including groundwater, forests, productive agricultural areas, environmentally sensitive areas, threatened and endangered species, surface water, floodplains, wetlands, wildlife habitat, mineral resources, parks and recreational resources, and historical and cultural resources;
- 6) Economic development—Compilation of goals and programs to maintain and expand the economic base of the unit, including analysis of the local labor force and the unit's ability to retain and attract future businesses, plus provisions for promoting the redevelopment of environmentally contaminated sites;
- 7) Intergovernmental cooperation—Proposals for joint planning, decision making, and conflict resolution with other jurisdictions, including school districts and neighboring local governments, and analysis of the unit's relationship to regional and state government;
- 8) Land-use—Description of amount, type, and density of existing land use along with a plan for future development and redevelopment of public and private property, including 20-year projections for land uses and utility service areas; and
- 9) Implementation—Description of how the preceding eight elements will be integrated and how progress toward the plan goals will be measured, plus a defined process for updating the plan itself at least once every 10 years.

Public hearings are required before adoption or amendment of the comprehensive plan. The law further requires that, beginning January 1, 2010, all incorporations, annexations, boundary changes, plat approvals, zoning ordinances, or other land use regulation must be consistent with the adopted plan.

Instead of directly requiring communities to develop comprehensive plans, the new legislation ties approval for routine functions (e.g. annexation, zoning and developing transportation networks) to having an effective comprehensive plan. These consistency requirements ensure that comprehensive plans will be prepared and used.

Another addition requires state agencies, including the DNR, to design programs, policies, and investments that respect community plans. Agencies are encouraged to balance their missions with a number of planning goals. In addition, whenever a state agency requires a plan as part of its program implementation (e.g., in awarding a grant for local park acquisition), the local plan must address the same planning goals. This measure is intended to help communities abide by the comprehensive plans they adopt.

The new law creates two comprehensive planning grants to assist in the cost of planning. These will be awarded to communities with acceptable comprehensive plans. Also, legislation was created to secure future funds for a Smart Growth Dividend Aid Program to encourage development on small-sized lots and promote affordable housing.

New legislation also instructs the University of Wisconsin-Extension to create model ordinances for traditional neighborhoods and conservation subdivisions and gives all cities, villages, and towns an additional year to create their own, similar ordinances.

Finally, statutory language revisions were made concerning local planning commissions. These changes describe a better balance for who in a community should be responsible for developing and maintaining a comprehensive plan.

These changes are a necessary and bold step in furthering the concepts of sound land use, a critical issue for Wisconsin if growth is to occur sensibly. The additions and changes will help shape the character of communities and ensure resources and prosperity will be managed for years to come. If your commu-

nity is currently involved in land-use planning, you and your students can get involved. Help shape the future of Wisconsin.

For more information or a copy of the new statutes, see the Department of Administration's Office of Land Information Services Web site:

<http://www.doa.state.wi.us/olis/> ❖

ed note: In response to the letter to the editor from Gerald Friday after the last land use issue of EE News, I received the following information about a land use education project.

Land Use Planning Education Project (LUPEP)

If you're interested in studying land use planning in your classroom, you might be interested in getting a copy of the Land Use Planning Education Project (LUPEP) curriculum. Teachers wrote the curriculum and designed it to provide a 3-4 week program with day-by-day lesson plans and various resources (curriculum, planimeters, digital photos of the community, overheads, ArcExplorer software and more) needed to effectively teach students about land use planning.

The goals of the project are to:

- ❖ Teach the land use planning process through the development of student land use plans;
- ❖ Familiarize students with land use planning issues within their own community;
- ❖ Increase critical thinking and writing skills;
- ❖ Share land use planning issues with students in other types of communities including rural, suburban and urban.

After the completion of the curriculum, teachers are invited to participate with their students in a land use forum, which brings students from different communities together with land use planning professionals to share and discuss land use planning.

This project is a partnership between Riveredge Nature Center, UW-Extension, and the Southeastern Wisconsin Coastal Management Program. If you're interested in receiving the Land Use Planning Education Project Unit, contact: Jim McGinity, Riveredge Nature Center, 262-375-2715, e-mail:

education@riveredgenc.com ❖





Seeking a Balance: Private Property Rights and the Common Good

By Dreux J. Watermolen, Land Use Team Leader, Wisconsin Department of Natural Resources

Community planning and the implementation of growth management measures often raise concerns about the impact of public decisions on private landowners. By their very nature, zoning and similar regulations preclude certain uses of particular parcels of land. Concerned citizens often question such restrictions on constitutional grounds. Local government officials, the folks with the primary responsibility for planning and managing growth, often share these concerns about the “taking” of private property. Understanding what the U.S. and Wisconsin Constitutions say about private property rights, and the rules that courts have developed to ensure governments abide by these important documents, is crucial to appreciating the challenge local officials face in trying to shape their communities.

The protection of private property rights is largely based on the U.S. Constitution. The Fourteenth Amendment to the Constitution asserts that no state shall “deprive any person of life, liberty, or property, without due process of law.” The Fifth Amendment prohibits government

from taking private property for public use without fairly compensating the landowner. A violation of the Fifth or Fourteenth Amendments is referred to as a “taking.”

For many years, these constitutional provisions were a limitation only on the power of the federal government and not on the activities of states. In 1897, however, the U.S. Supreme Court ruled that the Fifth Amendment also applied to the states. In addition, the Wisconsin Constitution provides limitations on the taking of private property by the state and local governments. Section 13 of Article I provides that “the property of no person shall be taken for public use without just compensation therefore.”

The authority to regulate the development and use of land falls under the state’s police power. The police power is a broad power that allows the public, through government, to regulate private activity to protect the health, safety, and welfare of society – i.e. the public good. The Wisconsin legislature can delegate the state’s police power to local governments by enacting statutes, such as planning and zoning enabling legislation, subject to certain limitations placed on the legislature by the Wisconsin Constitution. Local governments (counties, cities,

villages, and towns) are created by the state and are often referred to as “creatures of the state.” As such, the activities of these units of government are subject to the same constitutional limitations regarding private property regulation. With multiple levels of government responsible for land use, a complex legal framework for planning and regulating land use has developed.

Originally the constitutional provisions protecting property applied only to the direct appropriation of private land by government, usually through the power of eminent domain. Eminent domain is the power of the state to take private property without the consent of the owner through a process called condemnation. The government can only condemn or take property if it is for a legitimate public purpose and the government pays the property owner for the loss of the land. In the 1920s, however, the U.S. Supreme Court opened the door to the possibility of applying the Takings Clause to regulations enacted under government’s police powers. The court recognized that while certain regulations may be appropriate, if those regulations are too restrictive, it would be the same as if the government had taken property through condemnation. Such an act would require compen-

sation to the property owner for the loss. This kind of taking is referred to as a "regulatory taking." If a court feels that a regulation constitutes a taking, it can strike down the ordinance.

While the courts recognize that both the U.S. and Wisconsin Constitutions place limits on how the public regulates private property, the courts also recognize the importance of the public's right to regulate private property for the sake of protecting the public good. According to a landmark Wisconsin Supreme Court decision:

"Although one owns property, he may not do with it as he pleases, any more than he may act in accordance with his personal desires. As the interest of society justifies restraints upon individual conduct, so also does it justify restraints upon the use of which property may be devoted. It was not intended... to so far protect the individual in the use of his property as to enable him to use it to the detriment of society. By thus protecting individual rights, society did not part with the power to protect itself or promote its general well-being."

Some people may declare that they have the right to do whatever they want with their land. The courts have made it quite clear that this is not always the case. No one has an absolute right to use land in a way that may harm the public health or welfare, or in a way that damages the quality of life of neighboring landowners or the community as a whole.

Whether the impact of a regulation constitutes a taking is often a question of degree based on the specific facts of an individual case. If a regulation impacts many property owners in a similar situation, it is not likely that the court would declare it to be a taking. However, the courts have said that if the damage to an individual property owner is so great "that he ought not bear it under contemporary standards, then the courts are inclined to treat it as a 'taking' of the property." In addition, the U.S. Supreme Court has ruled that the Fifth Amendment is "de-

signed to bar government from forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole."

As they relate to land use plans and zoning, these constitutional provisions and court rulings require that government regulations be justified. Courts have upheld a variety of purposes as valid reasons for enacting such regulations, including prevention of pollution, protection of natural resources, historic properties and scenic views, and the control of building designs. Zoning laws are generally believed to be justified if: (1) they advance a legitimate governmental interest, such as those just mentioned; (2) they use reasonable means to achieve this objective; and (3) these means do not cause excessive harm to the individual. Regulations must also leave an owner with some economically beneficial use of the land. The Constitution, however, does not guarantee the most profitable use of land, only a right to a reasonable return or use of the land.

The takings issue has a high profile in nearly every community. Building a zoning ordinance around a land use plan can help protect private property rights and ensure justifiable regulations that benefit an entire community. When shaping a plan, it is important to be fair and seriously consider potential takings situations. Plans and ordinances that are flexible, yet provide a solid structure for decision-making, can help a community maintain its character while achieving its long-term vision. Understanding the relationship between planning, regulation, and private property rights is an important aspect of understanding how decisions shape the communities we live in. As environmental educators, we can play a key role in helping students develop such an understanding.

Some Private Property Rights and Takings Web Sites — Many organizations have formed to promote and protect private property rights. Understanding the views of these organizations is an important

part of understanding environmental issues. Following are some organizations that are concerned with takings law and private property rights. These sites vary widely in their views. Some people might find some of these organizations to be more extreme in their views than others. You and your students can be the judge.

The Project WET activity "Perspectives," on pages 6-7 of

this issue of *EE News* is a good way to have older students look at groups with different values. You can adapt that activity for studying the "takings" issue by substituting a takings issue for a water issue.

Alliance for America
www.allianceforamerica.org/

Alliance for Justice
www.afj.org/

American Association of Small Property Owners
www.smallpropertyowner.com/

American Farm Bureau Federation
www.fb.com

American Land Rights Association
www.landrights.org/

Citizens for Private Property Rights
hometown.aol.com/proprts/cppr/home.html

Citizens for a Sound Economy
www.cse.org/

Defenders of Property Rights
www.defendersproprights.org/

Environmental Policy Project
www.envpoly.org

League of Private Property Voters
www.landrights.org/_private/lppvhome.htm

The National Wetlands Coalition
www.thenwc.org/

People for the U.S.A.
www.pfw.org

Property Rights Congress
www.freedom.org/

Stop Taking Our Property – STOP Watch
members.aol.com/jwaugh7596/STOPwatch.html



Office of Land Information Services

To learn more about land use in Wisconsin and keep current with recent legislation, you can visit the Office of Land Information Services (OLIS) Web site at <http://www.doa.state.wi.us/olis/>

OLIS provides staff support to the Wisconsin Land Council and it administers the Wisconsin Land Information Program in conjunction with the Wisconsin Land Information Board. At their Web site, you can find and download copies of the new comprehensive planning legislation—the statutory language, as well as a guide to the new legislation. ❖



Activity: Perspectives

ed. note: This activity uses a water issue to help students learn more about how different people hold different values and how this affects how environmental issues are resolved. You can just as easily substitute a land use issue in this activity to help your students understand how land use issues arise and how they can be solved. You may want to look in your local newspaper and research a local land use issue.

Problem-solving and decision-making skills are integral abilities of responsible citizens. Because water plays a central role in human lives, water issues provide an excellent source of activities designed to develop those skills.

Objectives

Students will: a) recognize that people have differing values regarding water resource management issues; b) evaluate strengths and weaknesses of proposed solutions to water resource management issues; c) describe purposes of diverse advocacy groups and summarize their similarities and differences.

Grades

6-12

Subjects

government, environmental science

Materials

- ❖ reference material relating to one or more water issues (newspapers, magazines, encyclopedias, video recordings of news events)
- ❖ blackboard and chalk or butcher paper and markers.

Background

Fundamental to problem-solving and decision-making skills is the ability to analyze an issue. Environmental issues arise when differing values converge regarding resource management strategies. Because of the differing viewpoints of the people involved, most issues do not have simple solutions.

Finding, proposing, and implementing solutions to environmental issues often requires an understanding of values. When this understanding is lacking, attempts to resolve the issues often meet with resistance.

Values are expressed through feelings and sometimes lead to actions. Often taking years to develop, values are influenced by culture, family, and the social and physical environment. Values are usually well established and form an integral part of an individual's pattern of living. When water resource issues involve conflicting values, solutions are usually difficult to formulate and implement. Resolution often requires that those involved participate in a group decision-making process. This process should include an understanding of ecological and economic factors that relate to the issue. In addition, the views and opinions of the people affected by the issue should be considered.

The variety of views regarding the resolution of water-related issues often prompt people who support a particular path of action to group together. Sometimes these groups share a similar career or live in the same part of a town. Because these groups support a certain cause or policy, they are referred to as advocacy groups. Advocacy groups may range from grass roots to national organizations. Local groups may form to promote the cleaning of a hazardous waste site or to protect water designated for irrigation. People who share a career, watershed managers for example, may join together to support statewide water conservation practices, or a national environmental group may lobby Congress to enforce a water quality protection bill.

Procedure

Warm Up

Ask students to define a public issue. Discuss issues common to students' lives or present a scenario that demonstrates the complexities of an issue. For example, students can role-play an adult trying to get another family member to take shorter showers. Students should appreciate that issues arise because people have differing views about a situation.

The Activity

Part I

1. Discuss several problems concerning water quality and/or quantity. Assign or have students select a local water resource issue. News articles about issues can be made available for reference.
2. Have students describe the cause of the issue, determining if it was a natural or human-made occurrence. Or it could be a combination of the two. For example, ocean currents carry dumped waste materials thousands of miles up and down coastlines. If necessary, time can be allotted for students to research the issue.
3. Determine whom this issue affects. Discuss the values of each of the people or groups involved.
4. In the center of the board, write the water resource issue and circle it. (See diagram.)
5. Brainstorm or discuss potential solutions to the issue. Write solutions on the board around the circle enclosing the issue statement. Circle each solution; these are the "perspectives."
6. Have students evaluate each solution, listing pros and cons under each. Students can consider values, cost, time, resources, ecological balance, jobs, wildlife habitat, wilderness, historic perspectives, etc., when evaluating the solutions. Might a proposed solution benefit some people, while making the situation worse for others? Might a proposed solution actually create more problems in the long run?
7. Have students rank the solutions. Taking into consideration their own values, students should explain the reasoning behind their rankings.



PERSPECTIVES

The pros and cons of various solutions to community flooding



Part II

- After students have created a "Perspectives" diagram for a water-related issue, discuss the different viewpoints. Ask them if they think certain groups would support one solution over another. Explain that when a water-related issue arises, people who support a certain viewpoint often come from a particular group or will form a new one if none exists.
- See if students can assign a local, state, and/or national advocacy group to each viewpoint.
- Assign groups of students to research certain advocacy groups. They should look into the group's mission, the demographics of the membership (for example, size and local, state, national, and/or international involvement), and its primary methods of issue resolution. In addition, students can report on the history of the group. (Has the size, philosophy, or course of action changed over the years, or has it maintained consistency?)
- Each student group should prepare a class presentation about its researched advocacy group. Included in the report should be an evaluation of the advocacy group's success. What are the group's accomplishments? What are its weaknesses? Do students think the group has effectively contributed to water resource management decision-making processes?

Wrap Up

Discuss how managing water resource issues often involve the interactions of advocacy groups. Have students summarize why people might form groups to support a certain viewpoint. What do they consider potential benefits and dangers of aligning with a certain advocacy group? (Benefits could consist of strength in numbers, increased awareness, and networking. Problems could include conflicts of interest, financial needs, and increased responsibilities.)

Assessment

Have students:

- ❖ evaluate the strengths and weaknesses of proposed solutions to an issue and,
- ❖ rank suggested solutions to a water resource issue based on their evaluations. ❖

"Perspectives" is used with permission from The Watercourse/Montana State University and the Council for Environmental Education (CEE) from *the Project WET Curriculum and Activity Guide*. For further information about Project WET (Water Education for Teachers), contact the national office at 406-994-5392 or fax 406-994-1919. Copyright 1995.

Land use affects not only surface resources, but groundwater as well. The following activity will help your students think about how land uses can affect groundwater.

Activity: A Plume of Contamination

Objectives

Students will understand a) how contaminants can enter and move with groundwater and b) how difficult it can be to determine the source of groundwater contamination.

Grades

6-9

Subjects

science, health, environmental science

Materials

- ❖ plume of contamination activity sheet
- ❖ clear plastic boxes (like large deli boxes)—one for demonstration and one for each group of 3-4 students
- ❖ sand
- ❖ powdered grape drink mix (do not add water)
- ❖ powdered lemonade mix (do not add water)
- ❖ for each group of 3-4 students:
 - ✓ watering cans or spray bottles
 - ✓ plastic straw cut in half
 - ✓ pH paper
 - ✓ tape
- ❖ shoe box lids or pencil erasers for props

Background

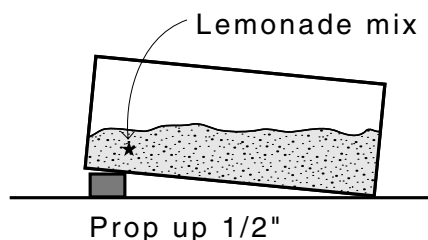
Contaminants on the surface of the ground can move slowly through soils and reach groundwater. Contaminants spread outward from the point of origin, forming a plume which “points” to the source of contamination. A small amount of some contaminants can ruin a large quantity of groundwater.

Some chemical contaminants are easily detected by changes in color, odor, or taste of groundwater. Most contaminants, however, are “invisible” and require chemical testing for detection. Testing of many wells in an area may be required to determine the source of contamination.

Procedure

Preparation

1. Before class, fill one clear plastic box for each group of 3-4 students with 1 inch of sand. Wet the sand with water and smooth off the surface. Station boxes around the classroom.



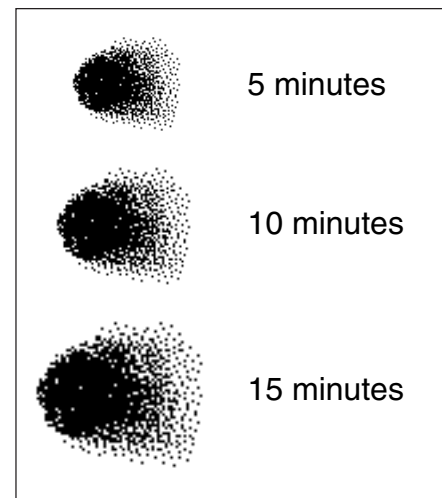
2. Prop up one end of each box about 1/2 inch.
3. Make a small depression in the sand and add 1/2 teaspoon of dry lemonade mix at the elevated end. Cover the lemonade with sand. Vary the location of the lemonade contaminant in each box and keep a record of the contamination location. (After the demonstration, students will use pH paper to find the source of contamination.)

Demonstration

1. Prepare a plastic box as above, but don't add lemonade.
2. Make a small depression on the elevated side of the box. Place about 1/4 teaspoon of powdered grape drink mix in the depression. This represents a chemical contaminant.
3. “Rain” water on the contaminant, using the spray bottle or watering can. The “rain” should be light so the food coloring is diluted and seeps into the sand rather than running off the surface. If sand erodes badly, try again, using lighter “rain” or spread a layer of pea gravel on top to hold the sand in place.
4. Every 2-3 minutes check the bottom of the box for evidence of color. After about 5 minutes, a plume of color should begin to appear. Draw

the shape of this plume, to scale, on the chalkboard.

5. Check the size and shape of the plume after 1/2 hour and draw the new plume, to scale, on the chalkboard. Discuss the results. The plume should be broad and fanlike, pointing to the source of contamination. Notice that the red and blue dye components of the grape drink separate. Why do you think this happens?



Investigation

1. Tell students that they will now have to use a chemical test to find the source of an invisible contaminant. Point out the boxes in which you've placed the lemonade mix. Explain that a lemonade “contaminant” has been put in a different location in each box and they will be using pH paper to find the plume of contamination. Lemonade is acidic and will lower the pH of water it encounters. It may be helpful to review the meaning of pH and the use of pH paper. Remind students that as acidity increases, pH decreases.
2. Work in small groups at the lemonade contaminant stations.
3. Lay a 6-inch strip of pH paper on a dry desk or counter. You may need to secure the paper to the desk or counter by placing a piece of tape at each end. Put a small drop of water

on one end of the pH paper, note the color and record the pH of the water on your activity sheet.

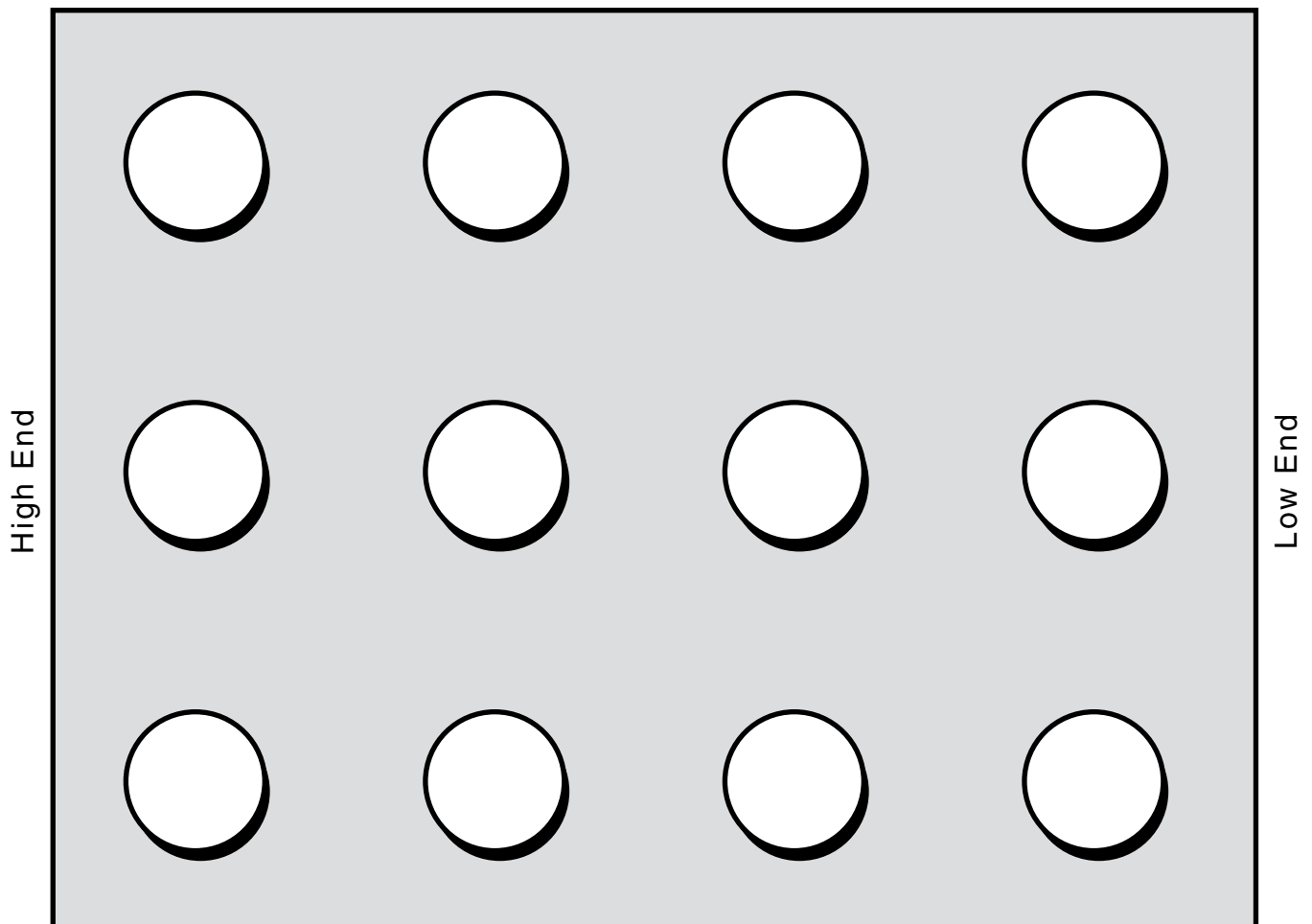
4. With a watering can, "rain" lightly on the upper end of each box so there's no runoff. Keep watering lightly for about 5 minutes. Wait 15-20 minutes.
5. Using a piece of plastic straw, remove a plug of sand (and water) from one of the locations indicated on the activity sheet diagram. Drop the wet sand on the pH paper. Note the color of the pH paper and determine the pH of the sample. If the sample is more acidic (has a lower pH) than tap water, place a "+" on that location on your activity sheet. If the acidity is the same or lower (pH same or higher), place a "-" at that location on your activity sheet. Rinse the straw.
6. Take a total of 12 "test well" samples from the locations shown on the diagram, rinsing the straw after each sample. Determine the pH of each sample and record a "+" or "-" on your activity sheet at each location.
7. Complete the activity sheet and discuss your results.
 - ❖ What makes a contaminant move from where it is buried?
 - ❖ What is a "plume of contamination?"
 - ❖ What are some real contaminants that could be seen, smelled, or tasted if they got into groundwater?
 - ❖ What are some real contaminants that could not be seen if they got into groundwater?
 - ❖ In the real world, what factors underground might influence the movement of contaminants?

Extensions

1. Research and report on the types and effects of groundwater contamination from various sources in your area (e.g. private homes, schools, farms, landfills, gasoline stations, mine sites, septic tanks, industries, businesses, salt stockpiles, etc.)
2. Research and report on the effects contaminated groundwater may have on human health.
3. Research bottled drinking water. Where does it come from? How much does it cost? What does the company do to ensure that it is safe for human consumption? What regulations govern the quality of bottled water? ❖

From: *Groundwater Study Guide*, Wisconsin Department of Natural Resources, copyright 1990. For more information about the study guide and other groundwater resources, see page 13.

Student Worksheet



Land Use Bookshelf

By Dreux J. Watermolen, *Land Use Team Leader, Bureau of Integrated Science Services*

(For additional land use-related resources, see the Winter 1998 issue of *EE News*, Vol. 15, No. 2. Copies still available. Contact: *EE News*, DNR, P.O. Box 7921, Madison, WI 53707, 608-267-5239, e-mail: morgac@dnr.state.wi.us)

General Books and Pamphlets

A Better Place to Live: Reshaping the American Suburb by Philip Langdon. Univ. Massachusetts Press, Harper Perennial, New York. 1995. In this book, Langdon draws on the principles of New Urbanism and describes the need to incorporate walkable streets, neighborhood shopping, compact town centers, and a wider range of housing choices into new and developing suburbs. The book is illustrated with many site plans and photographs.



Asphalt Nation: How the Automobile Took Over America, and How We Can Take It Back by Jane Kay Holtz. Crown Publishers, New York. 1997. In this book, the author advocates the need to reverse automobile dependency and find alternative solutions for current transportation dilemmas. Citing successful efforts from numerous communities around the country, she demonstrates that there are economic, political, architectural, and planning solutions that communities can use to address transportation issues.

Cities Back From the Edge: New Life for Downtown by Roberta Brandes Gratz and Norman Mintz. John Wiley and Sons, New York. 1998. The author explores the resurgence of "downtown America" by relating several compelling stories of urban recovery. Each story demonstrates successful approaches to key issues facing cities and towns, including transportation planning, containing urban sprawl, and preserving essential components of thriving and vibrant downtowns.

Changing Places: Rebuilding Community in the Age of Sprawl by Richard Moe and Carter Wilkie. Henry Holt and Company, New York. 1997. This book provides ideas on how to tap local resources to transform rundown and degraded areas into attractive, livable communities that preserve historic resources. The lessons presented are applicable to the protection and preservation of natural and cultural resources of all types.

Everyone Wins! A Citizen's Guide to Development by Richard D. Klein. 1990. APA Planners Press, Chicago. The author provides a

practical guide for community groups facing development-related problems. The book focuses on compromise solutions that do not prohibit development. The author explains the major issues associated with development and includes concrete tips on how to research each issue. The author shows how to identify goals and look for easy solutions first.

Guide to Community Planning in Wisconsin by Brian W. Ohm (ed.). University of Wisconsin-Extension, Madison. 1999. (Publ. No. G3697). This book provides a comprehensive overview of the planning process, state statutes, and court cases related to land use in Wisconsin. It provides a blended overview of both the legal framework for planning and numerous planning tools and devices. The book provides an excellent introduction to planning and growth management. Available from your county Extension office or by calling toll free 1-877-WIS-PUBS (947-7827).

Home from Nowhere: Remaking our Everyday World for the 21st Century by James Howard Kunstler. Simon and Schuster, New York. 1996. This book picks up where the author's highly acclaimed *The Geography of Nowhere* left off. Kunstler argues that our everyday environment is inhospitable and is one of the causes of a troubled culture. The book documents what the author characterizes as the current crisis in American communities and the efforts to revive cities through the restoration of traditional architecture and town planning.

Managing Growth in America's Communities by Douglas R. Porter. Island Press, Washington, DC. 1997. This book is a practical "how-to" book. It outlines proven strategies, programs, and techniques for managing growth in all types of government jurisdictions. Examples are presented from around the country and address issues such as respecting property rights, managing infrastructure, preserving community character, and protecting natural and cultural resources.

Metropolitics: A Regional Agenda for Community and Stability by Myron Orfield. Brookings Institute/Lincoln Institute of Land Policy, Cambridge, Mass. 1997. This book tackles the difficult and divisive issues associated with community cooperation. The author argues that state legislators can address many of these issues arising from different viewpoints and opposing agendas through regional policy reform and the creation of regional entities.

The American City: What Works and What Doesn't by Alexander Garvin. McGraw-Hill, New York. 1996. In this book, a noted planner and scholar analyzes more than 250 projects in 100 cities and tells why some projects succeed in achieving revitalization goals, why some fail, and what lessons can be learned from both the successes and failures. The author advocates combining private-sector efforts, community-level action, and broad-based government policy.



The Citizen's Guide to Zoning by Herbert H. Smith. 1983. APA Planners Press, Chicago. This easy-to-read book explains the fundamental principals of zoning. The author describes the process for developing zoning regulations and closely examines variances, zoning hearings, and frequently encountered zoning problems. The book provides an excellent introduction to the "nuts and bolts" of zoning law and is a good basic reference.

The Fractured Metropolis: Improving the New City, Restoring the Old City, Reshaping the Region by Jonathan Barnett. Harper Collins, New York. 1995. Using case studies from diverse regions of the country, the author summarizes the effects of sprawl on major metropolitan areas. The book includes recommendations for improving city design and controlling urban decay. Included in the text are 152 plans, diagrams, and photographs.

The New Urbanism: Toward an Architecture of Community by Peter Katz. McGraw-Hill, New York. 1994. This book explores the fundamental goals of the "new urbanism" movement — economically diverse housing; easy access to work, school and play; neighborhood shopping; and efficient and environmentally sound transportation systems. The book includes site plans and photographs of several highly acclaimed projects.

Today's Decisions, Tomorrow's Wisconsin by Brian Ohm. University of Wisconsin-Extension, Madison. 1998. This brochure emphasizes the importance of comprehensive planning and other tools as a means of directing the future growth of communities in ways that preserve community values and desires. The brochure includes a listing of Web sites with additional information. Available from your county Extension office or by calling toll free 1-877-WIS-PUBS (947-7827).

Curriculum Materials

Box City by Ginny and Dean Graves. Center for Understanding the Built Environment, Prairie Village, KS. 1992. (Grades K-12). With this curriculum kit, students learn how to develop and modify the built environment through hands-on role-playing. Students use cooperative activities to build a city incorporating their design and planning skills. The classroom packet includes boxes for building a model city.

Learning from the Land: Wisconsin Land Use by Bobbie Malone. Office of School Services, State Historical Society of Wisconsin, Madison. 78 pp. Geared to a fourth grade level, this student book can be used with a variety of Wisconsin history, geography, social studies, civics and conservation lessons. Available from the State Historical Society of Wisconsin, 816 State Street, Madison, WI 53706.

Subdivide and Conquer: A Modern Western produced and directed by Jeff Gersh and Chelsea Congdon. Bullfrog Films. (Grades 7-College, Adult). Two versions: 57 minutes or 27 minutes both with study guide. This film examines the underlying causes of urban sprawl and its effects on our sense of community and the environment. The film then suggests remedies and provides examples of public policy and land use planning solutions.

Viewfinders—A Visual Environmental Curriculum produced by the Dunn Foundation. These materials challenge children and adults to discover links between the environment, their community, and its appearance. Through this exploration, people are encouraged to become active stewards of their community's visual environment. Contact the Dunn Foundation, 25 Bellows Street, Warwick, RI 02888.

Urban Environmental Education by Jeffrey Frank and Michael Zamm (eds.). Univ. of Michigan School of Natural Resources, Ann Arbor. 1994. This publication is a resource guide and unit for workshop leaders who want to help educators explore the urban environment with their students. The book explains urban environmental education and offers alternative approaches. It contains several case studies and suggestions for teachers.

Walk Around the Block by Ginny Graves. Center for Understanding the Built Environment, Prairie Village, KS. 1992. (Grades K-12). This ready-to-use curriculum kit will help you teach children about architectural design, city planning, and the human processes that influence how a city works. Activities show kids how to evaluate buildings, neighborhoods, and cities, and how to advocate for a better built environment.

The following five items are available from the American Planning Association's Planners Book Service, 122 S. Michigan Ave., Suite 1600, Chicago, IL 60603; phone: 312-786-6344; fax: 312-431-9985; e-mail: BookService@planning.org.

Community as a Learning Resource by Ramona K Mullahey. R.K. Mullahey, Honolulu, HI. 1994. (Grades K-12). This curriculum guide is full of ideas and hands-on exercises to help educators teach about the built environment and planning. Exercises can be adapted to a range of grade and skill levels. The accompanying video highlights instructional resources on community planning and development. \$69.

Dilemmas of Development. The Urban Land Institute, Washington, DC. 1990. (Grades 9-12). This unique package — text, video, site map, and instructional aids — includes an entire high school curriculum on planning and development. It is designed to highlight the tradeoffs implicit in any public policy decision. The package is ideal for use in social studies and civics courses. \$55.

The Kid's Guide to Service Projects by Barbara A. Lewis. Free Spirit Publishers. 1995. (Grade 5-9). This guidebook will help you introduce children to community service. It includes more than 500 ideas for service projects, ranging from simple, one-time activities to large-scale projects that involve entire communities. \$10.95.

Urban Plan. Urban Land Institute, Washington, DC. 1991. (Grades 9-12). This package (text, video, site map and instructional aids) helps students understand land use and community planning issues and processes. Students work in competing development teams to respond to mock RFPs from a hypothetical city. Students then engage in the planning for an urban neighborhood redevelopment project. \$60.

Youth Planning Charrettes: A Guide for Planners, Teachers, and Youth Advocates by Bruce Race and Carolyn Torma. APA Planners Press, Chicago. 1999. (Grades K-8). This book explores various approaches to involving youth in successful community planning charrettes. Readers will learn how to design charrettes, starting with community workshops and ending with lessons learned. This resource will be valuable to those interested in involving youth in schools, museums, nature centers, and citizen groups. \$19.95.

Children's Literature

The Little House by Virginia Lee Burton. Houghton Mifflin, Boston. 1949. This story follows a little house through the centuries as the landscape changes from rural to urban. The book provides a look at how rural areas have changed and urban areas evolve.

Children's Literature

The Empty Lot by Dale Fife. Little, Brown and Co., Boston. 1991. This book tells the story of a man who decides to sell a piece of his grandfather's farm. The main character struggles with the prospect of a bulldozer changing the land as he knew it. The book provides an excellent introduction to land use values.

Something Upstairs by Avi. Avon, New York. 1988. In this piece of historical fiction, the main character travels back in time from the 1980s to the 1790s. The trip through time reveals the changes in the landscape and waterfront that occurred during the past 200 years.

Town and Country by Alice and Martin Provensen. Crown Publishers, New York. 1984. This informative book introduces children to the sights, sounds and life-styles of both urban and rural environments. Children first visit the bustling city through lyrical text and illustrations, and then explore life on a country farm. The book provides an excellent introduction to land use values.

Window by Jeannie Baker. Greenwillow Books, New York. 1991. This wordless picture book illustrates changes in the visual environment. A mother and her son observe the changing view through their window. The view changes from a forested wilderness to a city as the boy grows from infancy to adulthood. As a young man, he moves to the country, and views the rural scene from his window with his child.

Whatever Happened to the Baxter Place? By Pat Ross. Random House, New York. 1976. In this story, a family farm is sold to urban developers. Gradually, things begin to change. Small decisions are made, seemingly unnoticed, until, suddenly, there is a big impact. This book provides an excellent introduction to the concept of environmental impact assessment.

Web Resources

American Farmland Trust
www.farmland.org/

American Planning Association
www.planning.org/

The Center for Excellence in Sustainable Development
www.sustainable.doe.gov/

Congress for the New Urbanism
www.cnu.org/

International City/County Management Association
www.icma.org/

Joint Center for Sustainable Communities
www.usmayors.org/sustainable/

National Trust for Historic Preservation
www.nationaltrust.org/

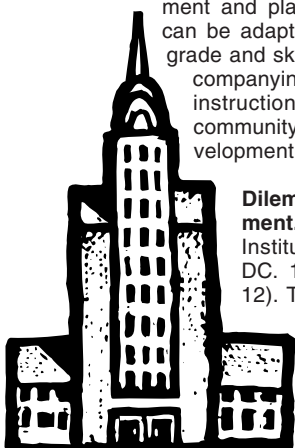
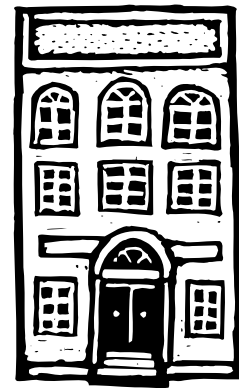
On Common Ground Foundation
<http://oncommonground.org>

The President's Council for Sustainable Development
www.whitehouse.gov/PCSD/

The Smart Growth Network
www.smartgrowth.org/index_frameset.html

The Sustainable Communities Network
www.sustainable.org/

Urban Land Institute
www.uli.org/ ♦



Miscellaneous News and Spring Events



Water Works Wonders! — International Drinking Water Week May 7-13, 2000

Celebrate our water resources during drinking water week, May 7-13, 2000. During this week, educational events are held in libraries, schools, drinking water treatment plants, shopping malls, and city halls. Groups schedule river clean-ups, hazardous waste collections, and other water pollution-fighting efforts. Help spread the word. Knowledge and action are important to safeguarding our drinking water supplies.

If you're interested in celebrating this week, the Blue Thumb Project can help provide you with ideas and activities. The Blue Thumb Project is an ongoing campaign to raise public awareness and understanding of drinking water issues and to motivate individuals, organizations, communities and local governments to make water-responsible choices. Project activities can be used year-round, but they're especially useful during Drinking Water Week. There are a number of kits and materials available. Contact: Blue Thumb Project, c/o American Water Works Association, 6666 West Quincy Avenue, Denver, Colorado 80235, 303-794-7711. You can also visit their Web site at: <http://www.awwa.org/bluethum.htm> ♦

You Can Help Ensure Safe Drinking Water

According to a 1999 Drinking Water Week press release published by the American Water Works Association (AWWA), consumers must help prevent pollution if the high quality of the U.S. drinking water supply is to be maintained.

"Today's technology allows water suppliers to test and treat water for hundreds of contaminants, helping make drinking water in the U.S. the safest in the world," says AWWA Executive Director Jack Hoffbuhr.

In 1997, he points out, over 90 percent of all community water systems had no violations of the Safe Drinking Water Act's health-based standards, according to the U.S. Environmental Protection Agency (EPA). Wisconsin has been largely successful in this area and less than 1 percent of systems do not meet the safe drinking water standards.

In 1984, Wisconsin enacted the "Groundwater Law," the most comprehensive regulatory program for groundwater in the country. Today, 43 states have groundwater protection laws, according to EPA. But despite these state laws and federal ones like Superfund, the Safe Drinking Water Act, and the Clean Water Act, many reports indicate ground water degradation is increasing.

"The best way to ensure our drinking water is clean is to prevent contaminants from getting in it in the first place," Hoffbuhr

says. "Consumers have an important role to play."

Here are six actions you can take to help prevent water pollution:

1. Choose natural household cleaners like borax, ammonia, vinegar, and baking soda. They are less expensive than their more toxic counterparts and work just as well.
2. Never pour toxic chemicals down the drain, on the ground, or in the trash.
3. Participate in your local community's household hazardous waste disposal day. If your community doesn't have one, contact your local environmental agency and organize one.
4. Take used motor oil and other automotive fluids to a service center that recycles them.
5. Reduce your use of lawn and garden pesticides and fertilizers and look for safer alternatives to control weeds and bugs. For example, geraniums repel Japanese beetles; garlic and mint repel aphids; and marigolds repel whiteflies.
6. Get involved. Attend local planning and zoning meetings and ask what is being done to protect water

sources from contamination. If your community relies on ground water, urge your local officials to implement a wellhead protection program. Let elected officials know that if they want to count on your vote, they have to be counted on to protect water sources.

The American Water Works Association and its 55,000 members work to assure a safe, sufficient supply of drinking water for the people of the United States, Canada, and Mexico. The group leads efforts to advance the science, technology, consumer awareness, management, conservation, and government policies related to drinking water. For additional information please contact Kelly Enders at 303-734-3410. You can visit their Web site at: <http://www.awwa.org>

ed. note: In February 2000, the WDNR sent out instructional videos on protecting your local water supply through wellhead protection planning. City Mayors and water utility officials were targeted to spearhead community action programs to protect their municipal wells. Planning will depend on local citizen involvement and efforts to develop a protection plan to meet unique community situations. Contact your city officials to start a wellhead protection plan in your community today. Help protect your water supply for citizens today and for future generations. ♦



GROUNDWATER STUDY GUIDE Available

The activity "A Plume of Contamination" on pages 8-9 came from the Wisconsin Department of Natural Resources' *Groundwater Study Guide*. This guide includes 13 groundwater activities and is included in a groundwater education packet containing background information on groundwater in Wisconsin, water cycle posters, and additional background materials.

It is designed for students in grades 6-9. The cost is \$3.50 for postage. If you're interested in a copy send \$3.50 to DNR, Bureau of Communication and Education, P.O. Box 7921, Madison, WI 53707. ♦



Celebrate Arbor Day— Do Something Nice for a Tree

In honor of Arbor Day consider the following:

1. Plant a tree in memory of a loved one.
2. Water a newly planted tree through its first growing season.
3. Place mulch around the base of a tree.
4. Learn what your community is doing for trees.
5. Take a walk and notice the trees in your neighborhood.
6. Ask your children/students to explain the values that they see in trees.
7. Plan an Arbor Day celebration.
8. Learn about the native trees in your area.
9. Create native woodland spaces, with other native plants.
10. Create community gardens on vacant lots.
11. Volunteer to be a member of your school's/church's Building and Grounds Committee. If it doesn't have one, suggest one be created.
12. Learn what your community is doing for trees.
13. Identify one change in your lifestyle that will have a positive ecological impact. ♦

—Source Sacramento Tree Foundation in response to the question posted on their Web site, "What would you ask someone to do for their urban forest?"

More Groundwater Resources

Groundwater: Protecting Wisconsin's buried treasure is a comprehensive guide to Wisconsin's rich groundwater resource. This DNR publication provides information on groundwater use in the state, the groundwater cycle, Wisconsin's aquifers, threats to groundwater, protecting the resource, protecting the groundwater you drink and use, safe drinking water monitoring, and glossary. High school teachers should have at least one copy per school as of Sept. 1999. Middle school teachers are welcome to order a free copy. This publication is included in the Groundwater Study Guide kit. Call the Bureau of Drinking Water and Groundwater at 608-266-0821 to order PUBL-DG-055-99.

Groundwater Model Project

The Groundwater Model Project is a fundraiser for the UW-Stevens Point Student Chapter of the American Water Resources Association. The groundwater model is made by the students at UW-Stevens Point and is used as an educational tool to demonstrate how water and contaminants move through aquifers, various soil structures and watersheds.

For more information, visit:

<http://www.uwsp.edu/stuorg/awra/h2omodel.html>

The model cost is \$350 plus \$10 shipping (allow 4-6 months). Models can be ordered in 2-4 weeks for an additional

\$20. Order forms are available at: AWRA Groundwater Model Project, College of Natural Resources, Room 252A, University of Wisconsin-Stevens Point, Stevens Point, WI 54481, (715) 346-4613, e-mail at: gwmproj@uwsp.edu, or download the form from:

<http://www.uwsp.edu/stuorg/awra/orderfrm.ptxt>

You can borrow a model from a number of DNR offices. For the location nearest you, contact

Janet Hutchens, Wisconsin Department of Natural Resources

Bureau of Drinking Water and Groundwater
608-261-8453.

Models are also available through the following sources.

Laura Felda

Adopt-A-Lake Coordinator
Wisconsin Lakes Partnership
UW-Stevens Point
Stevens Point, WI 54481
715-346-3366

Wisconsin Groundwater Association

Southeast Wisconsin at 414-291-8840
Eau Claire at 715-834-3161

Central WI Environmental Station and other Water Education Resource Centers

(715) 824-2428
<http://www.uwsp.edu/acad/cnr/affil/cwes/index.htm>

UW-Extension Offices, check your phone book for local offices. ♦

Asthma in the Air

How can you tell if the air outdoors is polluted? Kids with asthma say that playing and breathing outside on smoggy days "feels like being inside of a dog's mouth ... sweaty and sticky and yucky and wet."

On this video, kids with asthma speak out about how air pollution, especially ground-level ozone (smog), feels to them. They tell how they care for their health and work to solve air pollution problems in their communities.

With its lively soundtrack and energetic pace, *Asthma in the Air* is a great resource for classrooms and health education programs. The video speaks specifically to kids with asthma, but the message is universal: "When everybody does their part, it all adds up to cleaner air."

For more information or to order copies, please contact:

Publications

DNR-CE/6

101 South Webster Street

PO Box 7921

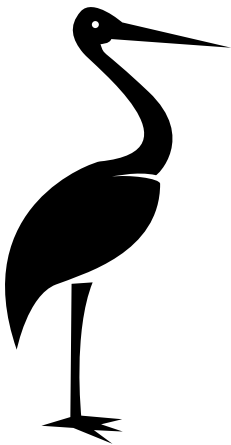
Madison, WI 53707-7921

Voice: 608-267-7375

Fax: 608-264-6293

Ask for publication CE-268-99. ♦

—This video was developed and produced by the Sixteenth Street Community Health Center Child Health Champion Project, Milwaukee, Wisconsin. Funded in part by a grant from the United States Environmental Protection Agency and by the Wisconsin Department of Natural Resources.



Whoopers in Wisconsin

Wildlife officials on the U.S./Canada Whooping Crane Recovery Team have recommended that central Wisconsin, in the vicinity of the Necedah National Wildlife Refuge, be the site for reintroduction of the endangered whooping crane, possibly as early as spring of 2001. Recovery team members had been studying three sites in Wisconsin, and sites in other states, as possible sites for reintroducing the cranes. Available habitat in central Wisconsin and distance from potential release sites to the existing wild population of whooping cranes at Wood Buffalo National Park in Canada, were important factors in the site's selection. Study members were also impressed with the outpouring of support from Wisconsin citizens. The cranes were pushed to the brink of extinction in the early 1900s, and are making a steady recovery from a low of 15 birds in the entire world, to a population that now numbers 265 birds in the wild and 132 in captivity.

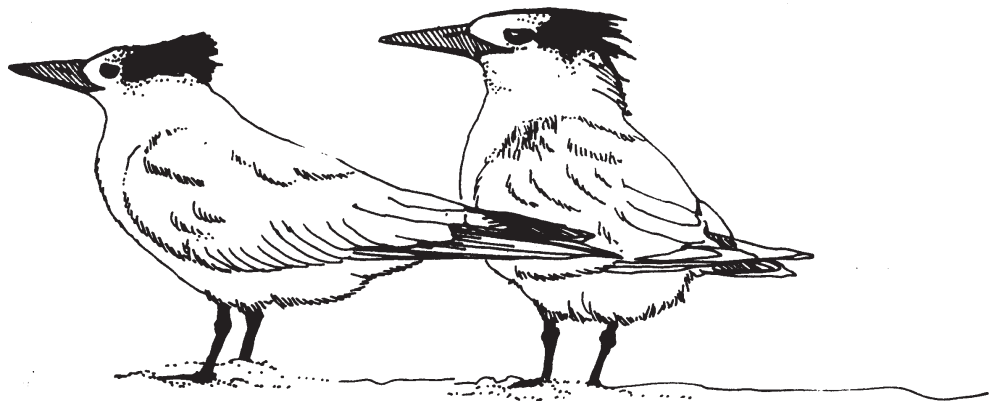
Birds for an initial whooping crane release in spring of 2001 will likely be supplied from a captive population maintained at Patuxent Wildlife Research Center near Laurel, Maryland, with birds for subsequent releases possibly coming from the International Crane Foundation in Baraboo. ♦

International Migratory Bird Day

Saturday, May 13, 2000

Grab your binoculars and celebrate International Migratory Bird Day. The new millennium is truly a time to celebrate our efforts in bird conservation and to focus our attention on ways of protecting more bird species in the years to come. This year, International Migratory Bird Day (IMBD) features a success story—the recovery of the peregrine falcon. Numbers of this species declined after World War II because of the use of pesticides. Protection provided by the Endangered Species Act of 1973, which prohibited the capture or killing of Peregrine Falcons, regulation of the use of pesticides in Canada and the United States in the 1970s, and active restoration programs in both countries enabled populations to begin to recover. In the 1990s, the two races of peregrine falcons once considered endangered were both declared recovered.

IMBD is an annual event created by Partners in Flight—a coalition of federal and state agencies, bird clubs, non-governmental organizations, corporations,



and individuals, whose mission is to conserve migratory birds. One way to achieve this mission is by increasing public awareness of the factors that may contribute to declines in bird populations. Here are some suggestions for increasing public awareness.

- ♦ Teach school kids or scouts about birds with the IMBD Educator's Packet and supplement.
- ♦ Invite your mayor or congressperson to a local bird walk or festival.

- ♦ Hold a daylong or weeklong birding festival.

- ♦ Raise funds for your migratory bird conservation project.

- ♦ Organize merchants at a local mall to set up a display about birds.

For information about events, educational materials and products, visit the IMBD 2000 Web site at

<http://www.americanbirding.org/imbdgen.htm/> ♦

World of the Whitetail: New Teaching Resource for Grades 6-8

Dr. Mary Kay Salwey, Wildlife Education Specialist, Bureau of Wildlife Management, Wisconsin Department of Natural Resources.

A new teaching resource has teachers talking. The **World of the Whitetail** is a brand new set of teaching trunks filled with hands-on, in-depth teaching activities for sixth-eighth grade students. Activities focus on the biology, ecology and management of the white-tailed deer. A number of activities also deal with the historical and modern human uses, beliefs, and interactions with this animal.

The project was co-sponsored by the Department of Natural Resources (DNR) Bureau of Wildlife Management and Whitetails Unlimited. Two project consultants, Beth Mittermaier and John Cler, were hired to develop and assemble the boxes. Beth is a part-time environmental educator with Havenwoods Environmental Center in Milwaukee and owner of an educational consulting company called E.A.R.T.H. Ltd. John is an enthusiastic eighth-grade science teacher, part-time state park summer naturalist/ranger, an avid deer hunter, and mayor of Wonewoc, Wisconsin. Together, these two highly skilled individuals produced what can only be described as a powerhouse of learning and fun!

The kits are composed of two large boxes of materials. One box houses a tanned deer hide, skull with antlers, lower jaw and a nearly complete deer skeleton. The other box contains three videos, pictorial references, charts and a number of smaller boxes filled with artifacts to be used with some of the two dozen activities described in the teacher's lesson guide. Five major sections of activities deal with different themes.

- ❖ **"Whitetails through Time,"** focuses on a historical theme of humans and deer.
- ❖ **"Life and Death of the Whitetail,"** looks at how white-tailed deer are adapted to survive. It introduces children to the life cycle of the deer.
- ❖ **"Ecology and Management of the Whitetail,"** transforms students into junior wildlife managers as they consider how deer populations grow over time.
- ❖ **"People and Deer,"** deals with the ways that modern people and deer interrelate.

❖ **"Watchable Whitetails,"** helps students learn how to identify a variety of deer sign from browsed twigs, to buck rubs and scrapes, to tracks and scat. They use rubber stamps to create their own "track stories" that deer might leave behind in the snow or mud.

Some of the teachers that field-tested the activities have suggested that a great way to use more of the activities during a given time frame is to divide the activities up according to discipline. During a 3-hour period of time, students can be exposed to the activities during math, history, English, social studies and biology.

Where can you get your hands on this exciting new teaching resource? One set of boxes has recently been delivered to each of Wisconsin's 12 CESAs. In addition,



one set of boxes resides within each DNR region. Also, the Whitetails Unlimited office in Sturgeon Bay has two sets of boxes. Teachers will probably need a week to review the contents and then a week to conduct the activities with their class. Here's who you can call:

CESA	Contact	Phone
#1 Milwaukee	Rick Grothaus	414-546-3000, ext. #457
#2 Milton	Connie Isackson	608-758-6232, ext. #339
#3 Fennimore	Patty Kauffman	608-822-3276
#4 New Salem	Mary Devine	608-786-4800
#5 Portage	Janet Gaber	608-742-8814, ext. 277
#6 Oshkosh	Peg Hamblin	920-424-3418
#7 Seymour (Fallen Timbers)	Libby Dorn	920-984-3700
#8 Gillett	Pam Kuck / Jane Bubolz	800-831-6391
#9 Tomahawk	Maureen Johnson	715-453-2141, ext. 216
#10 Chippewa Falls	Susan Olson	715-720-2069
#11 Turtle Lake	Bev Haverly	715-986-2020
#12 Ashland	Judy Ross	715-682-2316, ext. 110

Teachers should contact their CESA first to check out the "World of the Whitetail" deer boxes. If the boxes are already checked out, then teachers may contact one of the following DNR or Whitetails Unlimited offices:

Rhineland DNR	Sherry Kloesewski	715-365-8966
Eau Claire DNR	Mike Gappa	715-839-3774
Horicon DNR	Bill Volkert	920-387-7877
Green Bay DNR	Gene Tiser	920-492-5836
Bong Recreation Area (Kenosha County)	Beth Goeppinger	262-878-5607
Havenwoods Environmental Center (Milwaukee)	Mary Maronek	414-527-0232
Whitetails Unlimited (Sturgeon Bay)	Peter Gerl	920-743-6777

❖



EEK! For Teachers

EEK!—Environmental Education for Kids

<http://www.dnr.state.wi.us/eeek/>



Come see our new look! *EEK!* got a face-lift this winter. Check out the redesigned home page and section pages and watch for the following stories this spring:

Our Earth

Alien Invader – The Gypsy Moth

Read all about the gypsy moth and the problems it's causing in Wisconsin. Have your students keep their eyes open for newspaper articles about gypsy moths. They can also take our online Moth Mania Quiz.

Ice-off

Spring is on the way. Let *EEK!* know when the ice leaves your local lake.

Nature Notes

Know Your Frogs

Spring is here and the frogs will be singing. Come listen to them on *EEK!*

Spring Wildflower Walk

Take an online walk to view some of Wisconsin's wildflowers. Then go outside and see if you can find some of these spring bloomers.

Spring Fish Watching

Don't miss Wisconsin's sturgeon put on their annual show. *EEK!* will tell you more about these prehistoric fish and where you can see them.

Celebrate Arbor Day

Don't forget that Arbor Day is April 28. Your students can read about the history of Arbor Day and view this year's Arbor Day poster contest and Forest Appreciation Week writing contest winners.

Maple Syrup

Mmm, it's maple-sugaring time. Read all about how maple syrup is made and check out the Calendar of Events in Cool Stuff to see if there's a maple-sugaring event near you.

Get a Job — Career Information

Read about Kristin Hart's "Adventures in Engineering."

Cool Stuff

Find out about outdoor events and State Parks and Forests Centennial celebrations.

Teacher Pages

What You Can Do

Find lots of great ideas for you and your students for getting involved and giving the Earth a helping hand. These projects make for great Earth Day or any day learning opportunities.

Drinking Water Week

May 7-13, 2000

Go online and find information and ideas on how to help your students learn about water resources.

International Migratory Bird Day Saturday, May 13, 2000

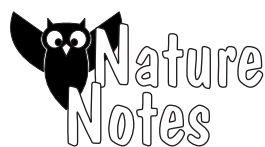
Grab your binoculars and celebrate International Migratory Bird Day. For information about events, educational materials and products, visit the IMBD 2000 Web site at

<http://www.americanbirding.org/imbdgen.htm/>

Coming Soon

Tree ID Key

Go online and give tree identification a try. Then go outside and test your skills. And, don't forget—there is an online water critter key on *EEK!*. ♦





Some Suggested Spring WILD/PLT Activities

Here are some suggested WILD/PLT activities for you to use with students this spring:

Polar Bears in Phoenix. For those of you taking spring field trips to the zoo, have students design a zoo enclosure for a specific animal before the field trip. Have them compare their drawings and ideas with the actual enclosure. Leave student recommendations with zoo educators. For more ideas on how to adapt activities to your zoo trip, request the "Go WILD at the ZOO" extension by contacting Betty at the Project WILD office.

Aquatic Times. A great and fun way to have your students learn about community water resources is to prepare an "Aquatic Times" newspaper. The teachers and students at Prairie View Middle School in Sun Prairie have completed this project for 5 years. Students have conducted monitoring, completed interviews, prepared editorials and cartoons and have written feature articles on water resources in their community. To request sample copies contact Al by email or phone.

Tree Treasures and Tree Factory. Combine these two PLT activities that look at how trees grow and the products we derive from them. These are great activities to combine with a look at a "sugarbush" operation. Check the EEK! Web site for additional information on maple syrup. (<http://www.dnr.state.wi.us/eeek/>)

Bearly Born. As bears emerge from their winter dens, the females bring their cubs out of the protected environment of the den. The objective of this activity is to help students identify similar survival needs of black bears and human babies. This activity is suitable for grades 4-7 and reinforces science, mathematics and adds to student vocabulary. Can be adapted and simplified for grades 1-3.

Project WILD/Project Learning Tree

P.O. Box 7921
Madison, WI 53707
<http://www.dnr.state.wi.us/org/caer/ce/pltwild/>

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Let's Go Fly a Kite. Spring winds encourage kite flying and outdoor activities. Making and designing a kite teaches art, science and math, (measurement, forms). It is suitable for grade 4-6 and older. The objective of this activity is for students to recognize that wildlife has value as an inspiration for art.

Rainfall and the Forest. "April showers brings May flowers." Students are familiar with that saying, but in this activity students correlate rainfall data with vegetative communities; correlate vegetative communities with animal life; and recognize interrelationships among living and non-living elements of the environment. Best for grades 6-9, it can be used in science and social studies.

Flip the Switch For Wildlife. Students illustrate the route of energy from its sources to human use, including environmental impacts along its path. They then invent and try ways to make beneficial impacts on wildlife through their personal energy-use practices. Suitable for grades 5-12.

Jen Richards Begins WILD Job

Our new assistant coordinator for WILD/PLT is Jennifer Richards. Jen has worked in the environmental education field since graduating from Penn State University with a B.S. in Wildlife and Fisheries Science. She comes to us after working as a National Park Service interpreter in the Outer Banks of North Carolina and as an environmental educator with Sea World of Florida. Jen will work on enhancing the



Wisconsin WILD/PLT program, conduct workshops and complete special projects like the Earth Flag program. Please call or email her if you need any information regarding WILD/PLT.

Facilitator Conferences in June

The 2000 facilitator conferences are scheduled for June 8 in Stevens Point and June 15 in Milwaukee. Pre-registration is required and can be completed by contacting Betty. The themes this year are the northern forest community, Paper Makes Wisconsin Great, and shore land and shallows issues. We look forward to seeing you there.

NEW! Participant Survey Form

Facilitators conducting WILD/PLT workshops this year will be receiving a simplified and improved Participant Survey Form. The form is used with both WILD and PLT workshops or with joint workshops. The evaluation questions will provide feedback from participants that will prove helpful for future workshops. The PLT Advisory Committee and facilitators Judy Klippel, Lucy Slinger, and Dennis Yockers provided input to the form.

Congratulations

Congratulations to Curt Wilson of Green Bay who has just been appointed Land Leader for the NR's Northeast Region. Curt is a very active Project Learning Tree facilitator and was Facilitator of the Year for 1996-1997 along with Kim Kaster of Bay Beach Wildlife Sanctuary. He was also named 1997 Forester of the Year. PLT has been fortunate to have Curt facilitating workshops and we hope that he will continue to be active. The staff of WILD and PLT wishes him the best of luck and much success in his new position. ♦



News From the Wisconsin Association for Environmental Education

233 Nelson Hall
University of Wisconsin-Stevens Point
Stevens Point, WI 54481
715-346-2796

Notes from the Chair

The year 2000 is a year of new beginnings, including my role as the chairperson of WAE. Let me introduce myself, I'm Cindy Halter and I'm looking forward to the opportunity to lead WAE in the year 2000.

What is most rewarding for me working on the board of directors are the wonderful ideas and the things that result from people working together. Many of you were able to participate in the Winter Workshop 2000 and the 1999 fall conference. Both were excellent events that brought environmental educators together to share ideas, methodologies, and laughter. What many of you don't get a glimpse of are the many events that go on "behind the scenes" to help make WAE a dynamic EE organization. Here's a sample.

The awards committee promotes the awards program, reviews nominations and awards outstanding environmental educators throughout the state. The elections committee organizes and tabulates the elections each year so new, fresh voices can join the board of directors and strengthen and improve our organizational status. The management committee ensures that the management of the organization is running and in top-notch form. The networking committee communicates with other environmental education organizations throughout the state and nation strengthening our organization and position in the field of environmental education. The finance committee maintains our financial security as an organization. The conference committees (both fall and winter workshop) plan, organize and facilitate dynamic conferences for the membership. And the membership committee promotes membership and provides services for its members.

Each year many individuals volunteer their time on WAE committees. We are, however, ALWAYS searching for more volunteers. I encourage you to get involved. If you are not already involved in WAE, there are many rewards awaiting you! If you are interested in strengthening your organization, please contact WAE's administrative assistant, Cathy MacKay at 715-346-2796. Her office hours are M-W-F from 1-5 p.m. Or you can email Cathy at wae@uwsp.edu.

*Environmentally yours,
Cindy Halter*

Who's Who on the WAE Board of Directors

Those of us serving on the WAE board of directors decided that we'd begin another new column for the WAE news portion of *EE News*. This column is meant to introduce us to you. To kick it off, here is a bit about me, Cindy Halter.

I have been a member of WAE for 15 years, starting when I was a junior in college. My first conference was the 1985 Midwest EE conference held in La Crosse, which has since become my residence. A number of students, including me, were involved in planning that conference and it gave me the opportunity to feel like I was part of the organization. For me, it was a great way to get started!

Throughout the years I have remained a part of WAE. Some years I have served on committees and helped to coordinate events and other years I simply participate in WAE events. I've worked as a naturalist some, but most of my professional

career was spent in a seventh grade life science classroom. I say "was" because for the last 4 years I have been at home (and still am) with my two daughters. But, I've recently had the opportunity to teach an EE Methods course for preservice teachers at the university, which was very rewarding.

Currently, I serve as chair for the organization. I began serving on the board in 1998, as an appointee. I've worked on several committees, but my heart is in working on the membership committee. I feel like our organization can only be as strong as its members.

I encourage you to contact any other board member or me if you have any comments, concerns or ideas for the organization. I look forward to getting to know more of you and working with you to promote environmental education in the year 2000. ♦

Welcome New Board Members

by David Eagan, Election Committee Chair

Each fall, the WAE membership elects three new members to its Board of Directors. Board members serve 3-year terms. Please welcome Paul Denowski, Jim McGinity and Mary Pardee. A fourth board member, Kerry Eastman, was also recently appointed to complete a former member's term. All are strongly committed to promote and expand WAE's environmental leadership in the state.

While growing up on a Wisconsin farm, **Paul Denowski** acquired a deep love of the outdoors. He now shares this "passion for nature," as he calls it, with school children at the Edwards YMCA Camp in East Troy, where he works as environmental education director. As a board member, Paul will work in particular to strengthen the involvement of Wisconsin's nature and environmental centers in WAE's programs and activities.

Jim McGinity is director of environmental education at Riveredge Nature Center in Newburg. Positive experiences in nature, Jim believes, will lead people to become responsible environmental stewards. His 13 years of outdoor teaching experience include 9 years in Florida, where he was active in the state environmental education organization. To strengthen WAE, Jim hopes to diversify the membership, particularly among professional environmental educators.

Another Wisconsin native, **Mary Pardee's** farm experiences showed her how outdoor learning experiences can "change a casual environmental attitude into one firmly established in knowledge and action." Mary recently started working as an environmental educator for Kids Express Learning Center / Prairie View Farm in Madison — a preschool/kindergarten that focuses on arts and nature. For the last 6 years Mary directed the Brillion Nature Center in Brillion.

Continued on page 19

Welcome, continued from page 18

Kerry Eastman grew up in Sacramento, California and graduated from UC Berkeley in 1997 with a BS in Conservation and Resource Studies, minor in Education. While in the Bay area she had the opportunity to work for the Marine Science Institute (MSI). As a science instructor for MSI, she worked with K-adult participants in land programs and aboard the research vessel, *Inland Seas*, teaching bay ecology. After graduation she moved to Wisconsin to be with her fiancé, Eric. Prior to graduate school, she worked in Milwaukee as a teaching assistant and a middle school science teacher.

Tom Barrett is the student representative to WAEE. He moved to Wisconsin this past January to start a masters program in environmental education at UW-Stevens Point. His undergraduate degree is in Wildlife and Fisheries from the University of Arizona. He worked at the AZ-Sonora Desert Museum and volunteered at an elementary school leading outdoor education trips and at the Tucson Children's Museum. The past three summers he has worked in Minnesota as a naturalist. One of his goals in being a student rep is to get more students involved in the WAEE and to help them learn more about different opportunities in the field of EE.

Thanks to everyone who voted. Please send names of good candidates for next year's election (and we'll encourage them to run) to WAEE (wae@uwsp.edu).

For a full list of WAEE board members, see page 20. ♦



Web Design Help Needed

Don't you think it's time for a WAEE Web site? Well, so do we. Therefore, the WAEE is looking for Web-savvy folks to help in the development and design of the very first WAEE Web site. If you are enthusiastic, creative, Web-talented, or have great writing skills, WAEE would truly appreciate your time and talents on this project! If you are interested, please contact Cathy Mackay at the WAEE office: 715-346-2796 or via email wae@uwsp.edu. ♦



Fall Conference 2000

As we close out one millennium and head into the next, we have a chance to look at how those who came before us had an impact on the future. The WAEE fall conference in the year 2000 will try to do just that. The conference is being held at the Perlstein Resort and Conference Center in lake Delton Wisconsin on September 22-24. The program promises many great field trips to see some of central Wisconsin's natural beauty and historical places.

WAEE encourages anyone interested in environmental history to join the planning committee. Contact: Geoffrey Bishop Chair, e-mail:

naturec@naturesclassroomins.org ♦

On-Line Discussion Forum for WAEE Members!

Wouldn't it be great to be able to talk to other educators in the state and ask questions like; what EE projects are you working on? What are your favorite EE activities? How can I incorporate EE into my social studies class?

Well, now you can have these discussions with other WAEE members via the Internet! WAEE has formed a discussion group housed within the EdGateway Web site, <http://www.edgateway.net>. The WAEE discussion group is intended as a forum for idea sharing, discussing trends and issues in EE, project sharing and events sharing. Messages and questions can be posted to the discussion group by anyone who joins EdGateway and subscribes to the WAEE group. You and other educators will generate the discussion topics allowing WAEE members to connect with each other.

EdGateway can also be used as a resource for teachers. As a Web-based tool, EdGateway offers educators and organizations the ability to share events, find and learn about other organizations or people and participate in discussions. There are several communities that EdGateway emphasizes, including environmental education, science, math, and the State EE Roundtable. Each community has many groups affiliated with it, along with their own discussion groups. By joining EdGateway, you are getting in touch with educators all across the country and even the world to exchange ideas, discuss trends or provide suggestions for projects.

So, go ahead and set your browser on <http://www.edgateway.net> and start sharing your ideas with others!

WAEE wants to remind you that specific questions regarding membership, conferences, or the organization should be directed to Cathy Mackay, 715-346-2796 or wae@uwsp.edu. ♦

Focus on EE in Wisconsin...

This issue's focus:

WEEB-The Wisconsin Environmental Education Board:

Who are they and what do they do?

The Wisconsin Environmental Education Board (WEEB) was established by legislative action (Act 299) in 1989. The WEEB is made up of appointed representatives of the Department of Natural Resources, Department of Public Instruction, University of Wisconsin System, Wisconsin Technical College System, one majority and one minority party senator and representative, and seven members representing environmental educators, conservation and environmental organizations, business and industry, agriculture, labor, faculty of public and private institutions of higher education, and nature centers and zoos.

Act 299 established the primary duties of the WEEB. They are to identify needs and establish priorities for EE in Wisconsin; establish a competitive grants program; and seek private funds in support of the grants program.

Over the years the WEEB has worked to enhance networking and communication. They have sponsored a statewide environmental education summit; supported the ongoing "EE Works for Wis-

consin" campaign; promoted the development of the Wisconsin Model Academic Standards for Environmental Education; and expanded the original grant program to include forestry and energy grants.

Standing committees of the board are planning, development, grants, and nominations. The planning committee, under the direction of Bill Rockwell, led the board in a strategic planning process resulting in an operational plan that will guide board activities well into the future. The strategic priorities established are implementation of environmental education in schools, leadership in environmental education, assessment of environmental literacy, and statewide communication and coordination.

The development committee, guided by Senator Brian Burke with assistance from his aid Barry Ashenfelter and Dr. Randy Champeau, recently announced the establishment of the Environmental Education Trust Fund of WI. Contributions to this fund send a strong signal that environmental education is valuable and needed. (For more information about how to donate, contact the WEEB office.)

Since its beginning, the WEEB has awarded nearly \$2 million in grants to local schools, conservation clubs, nature centers and non-profit organizations. The program has increased from an original \$200,000 per year for general grants to include an additional \$200,000 for forestry related projects. Matching funds to these grant awards have totaled over \$5 million! Grant projects have contributed significantly to making Wisconsin a national leader in environmental education.

In months to come, the WEEB will be seeking input and response to proposed strategies for accomplishing its strategic priorities. Please take time to share your thoughts and suggestions with WEEB board members. If you are interested in being more actively involved in projects and on committees, please contact someone on the board to volunteer your assistance.

Current WEEB members are:

Mark Miller	State Representative
Debra Blomberg	Business and Industry
Bill Buckley	Environmental Organizations
Brian Burke	State Senator
Robin Harris	University of Wisconsin System
Neal Kedzie	State Representative
Rick Koziel (Chair)	Nature Centers and Zoos
Dan Kvalheim	Agriculture
Shelley Lee	Department of Public Instruction
Pat Marinac	Environmental Educators
William Neuhaus	Labor
William Rockwell	Wisconsin Technical College
Brian Rude	State Senator
Al Stenstrup	Department of Natural Resources
Rick Wilke	Higher Education Faculty

The WEEB office is located at: 110 CNR, UW-Stevens Point, Stevens Point, WI 54481. 715-346-3805. Email: weeb@uwsp.edu or visit the Web site at: <http://weeb.uwsp.edu>. ♦

WAE 2000 Board of Directors

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Bookshelf

(Listing in the Bookshelf does not imply endorsement by EE News. These listings are for informational purposes only.)

General Books, Pamphlets, Magazines, and Posters

A Voice for the Wilderness—Northland College Salutes Sigurd F. Olson. He was a scientist, educator, writer and activist who turned his personal beliefs public and helped define contemporary understanding of wilderness values. This 15-page publication contains information and articles about Sigurd Olson. Classroom sets (30) of this publication are available for a \$5.00 shipping/handling charge. (Most appropriate for grades 9-12, English, social studies, literature, biology, science, or environmental studies classes.) Contact: Clayton Russell, Sigurd Olson Environmental Institute, Northland College, Ashland, WI 54806, 715-682-1491, e-mail: crussel@northland.edu

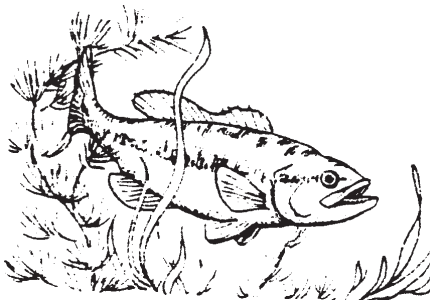
Better Homes & Groundwater—A Homeowners Guide. Wisconsin Department of Natural Resources, 1995. This booklet will help you learn more about what you can do around your help to help keep groundwater clean and safe. From lawn care tips to household cleaners, this book will give you some new ideas for working around the house. Cost: free. Contact: Bureau of Drinking Water and Groundwater at 608-266-0821. Order publ #WR386-95.



Educ'Ade, Environmental Education Publications for Teachers. Wisconsin Dept. of Natural Resources, 1999 (Revised). This updated list of publications available through the DNR contains publications on air and

water quality, solid waste and recycling, forestry, wildlife, endangered resources, and environmental education. Cost: free. Order by calling 1-608-267-7375 or email: morgac@dnr.state.wi.us. Request publication #IE-015.

Gone Fishing—A Photographic Celebration of Fishing by Bob Rashid. 1999. 116 pp. Whether hiking through a farm field in search of a trout stream or stretching out in a folding chair waiting for the next bite, anglers agree on one point: that the joy of fishing is not so much at the end of the line, but in the lapping of water, the calls of birds and insects, the sun, snow, and stars, and the people met along the way. Photographer Bob Rashid captures in word and image that there's more to fishing than catching fish. Cost: \$34.95. University of Wisconsin Press, 1-800-621-2736.



Growing Ideas: A Journal of Garden-Based Learning. National Gardening Association. Educators interested in using plants to explore science concepts, environmental themes, history and/or multicultural studies are invited to request a free copy of this newsletter. It is rich with classroom-tested project ideas. You'll be able to exchange gardening experiences online with other classrooms and learn about effective teaching strategies, grants, and other sources of support. Contact: National Gardening Association, Department MP, 180 Flynn Avenue, Burlington, VT 05401, 1-800-538-7476, email: eddept@garden.org

Landscaping for Wildlife and Water Quality. Carol Henderson, Minnesota Department of Natural Resources. This 180-page spiral bound book is full of information on promoting better water quality and restoring wildlife habitat. Learn techniques to stabilize your shoreline, prevent erosion, encourage and restore wildlife habitat, wildflowers, and clean water. Cost: \$19.95. Order from Minnesota's Bookstore, 117 University Avenue, St. Paul, MN 55155, 1-800-657-3757.

Learning to Grow. Wisconsin Department of Natural Resources, 2000. This 16-page special supplement to Wisconsin Natural Resources magazine provides you with an overview of DNR education programs. Learn more about DNR nature centers, publications, and programs. And, read about how schools and the DNR have teamed up to benefit the environment. Cost: free. Contact: Carrie Morgan, DNR, CE/6, P.O. Box 7921, Madison, WI 53707, 608-267-5239, e-mail: morgac@dnr.state.wi.us.

Tracks. Michigan United Conservation Clubs. This magazine for kids is published September through May. Cost: \$5.00 for a single subscription, \$2.00/issue for 10 or more. Free issue available upon request. Contact: Editor, Tracks Magazine, Box 30235, Lansing, MI 48909, 517-346-6464.



Audio-Visual

Environmental Songs for Kids produced by Coco Kallis on Smithsonian Folkways Recordings, 1999. Kallis performs with a number of musicians on this 12-song recording of environmental songs. Environmental Songs for Kids is accompanied by a 24-page booklet that lists lyrics and suggests several different environmental issues for discussion not only between children and adults, but also among adults. Topics include water, recycling, pollution, and nature. Cost: CD, \$14.00; cassette, \$8.50. Order from: Smithsonian Folkways Recordings, 1-800-410-9815 or via the internet at www.si.edu/folkways.

Managing Northern Hardwoods for Long Term Sustainability by UW-Extension. More than 200,000 private woodland owners in Wisconsin own approximately 60 percent of the 16 million acres of forestland. If you are one of these owners, or if you are thinking of purchasing woodland property, this video will provide you with the tools necessary to develop a forest management plan. Cost: \$10.00. Send check or money order to: Florence County UW-Extension, HC 1, Box 82A, Florence, WI 54121.

Web Resources

The Earth Science Educator

<http://esdcd.gsfc.nasa.gov/ESD/edu>

This site provides 160 links to student projects, teacher resources, software, data sets, and more, with appropriate grade levels marked. Topics cover the deep earth, the ground, the atmosphere and space.

UW-Madison Dept. of Botany Virtual Foliage Home Page

<http://www.wisc.edu/botany/virtual.html>

This site has more than 5,000 images of plants.

U.S. Geological Survey Water Resources Education Resources

<http://water.usgs.gov/publiceducation.html/>

Contains a collection of classroom activities that teach students about various aspects of water. There is an interactive center, FrogWeb, where students can give opinions and test their water knowledge. FrogWeb focuses on amphibian declines and deformities, and free education posters on wetlands and water use, and more. ♦





Spring Calendar

March 14-15, 5:00 p.m.–9:30 p.m. *Get WILD with Angler Education.* Spooner, WI. This workshop will combine three complementary programs, Project WILD, Angler Education, and Water Action Volunteers. Participants must attend both days. Cost: \$15.00. Contact: John Haack, 715-635-7406.

March 16, 23. *Project WILD Workshop.* Heckrodt Nature Center, Menasha. Join other K-12 educators as you experience Project WILD's hands-on activities. WILD is an interdisciplinary environmental education program with a focus on wildlife. Contact: Kathi Stopher, 920-727-9266.

March 20, 27, April 3, 10. (4:30 p.m. – 8:30 p.m.) *K-12 Energy Education Program (KEEP) Workshop.* Crandon High School, Crandon, WI. Through hands-on activities and class discussions, learn how you can enhance students' understanding of what energy is, where it comes from, and how it affects their lives. You will receive a copy of the KEEP Energy Education Activity Guide. Contact: UW-Stevens Point, 715-346-4770.

March 21, 28, April 4, 11. (4:30 p.m.–8:30 p.m.) *K-12 Energy Education Program (KEEP) Workshop.* Baraboo High School, Baraboo, WI. Contact: UW-Stevens Point, 715-346-4770. (See description at March 20.)

March 22, 29, April 5, 12. (4:30 p.m.–8:30 p.m.) *K-12 Energy Education Program (KEEP) Workshop.* ReNew the Earth Institute, Custer, WI. Contact: UW-Stevens Point, 715-346-4770. (See description at March 20.)

March 24-26. *Environmental Education Teaching Methods* (NRES 510). Central Wisconsin Environmental Station, Amherst Junction, WI. (1 credit) This course covers strategies for teaching K-12 students about the environment using effective educational methodology. Topics include environmental values and teaching problem-solving skills. Meets DPI certification

requirement in environmental education in conjunction with Geography 339 from UWEX. Certified teachers only. Cost: 1 university credit, plus additional fees for facilities usage, resource materials, and room and board ranging from \$25.00 to \$125.00, depending on student-exercised options, will be required for this course. Details will be provided with confirmation materials. Contact:

University of Wisconsin-Stevens Point, UWSP Extension Office of Credit Outreach, Room 012 Main Building, 2100 Main St., Stevens Point, WI 54481-3897, 715-346-3838 or 800-898-9472.

March 28, 30, April 4, 6. (4:30 p.m.–8:30 p.m.) *K-12 Energy Education Program (KEEP) Workshop.* Prairie du Chien High School, Prairie du Chien, WI. Contact: UW-Stevens Point, 715-346-4770. (See description at March 20.)

April 1, May 6. (8:00 a.m.–4:30 p.m.) *K-12 Energy Education Program (KEEP) Workshop.* Washington Island High School, Washington Island. Contact: UW-Stevens Point, 715-346-4770. (See description at March 20.)

April 3, 10, 17, 14. (4:30 p.m.–8:30 p.m.) *K-12 Energy Education Program (KEEP) Workshop.* Oshkosh West High School, Oshkosh. Contact: UW-Stevens Point, 715-346-4770. (See description at March 20.)

April 6, 13, 17, 27. (4:30 p.m.–8:30 p.m.) *K-12 Energy Education Program (KEEP) Workshop.* Marinette High School, Marinette. Contact: UW-Stevens Point, 715-346-4770. (See description at March 20.)

April 11, 13. *Project WILD Workshop.* Aldo Leopold Nature Center, Monona, WI. Join other K-12 educators as you experience Project WILD's hands-on activities. WILD is an interdisciplinary environmental education program with a focus on wildlife. Contact: Gail Epping, Aldo Leopold Nature Center, 300 Femrite Drive, Monona, WI 53716, 608-221-0404.

April 12, 12:30 p.m.–7:30 p.m. *Get WILD with Angler Education.* Eau Claire, WI. This workshop will combine three complementary programs, Project WILD, Angler Education, and Water Action Volunteers. Participants must attend both days. Cost: \$15.00. Contact: Holly Eaton, 715-839-1634.

April 15. *Earth Day Festival.* Custer, WI. Celebrate Earth Day at the ReNew the Earth Institute. See working solar and wind systems, solar ovens, and other environmental products and resources. For more information, contact: Midwest Renewable Energy Association, 7558 Deer Rd., Custer, WI 54423, 715-592-6595, email: mreainfo@wi-net.com

April 19-22. *Seventeenth Annual Careers in Forestry and Natural Resources.* Trees for Tomorrow, Eagle River, WI. This career workshop is for high school students. During the three days of the workshop, participants engage in field activities to give them a taste of the work of natural resource professionals. Cost: \$110, includes meals, lodging, materi-

als. Enrollment limited to 40 high school students. Contact: 1-800-838-9472.

April 26-29. *Moving Into the Mainstream—Sixth National Volunteer Monitoring Conference.* Austin, Texas. This conference, designed for new and experienced volunteer program coordinators, will emphasize information sharing and exploring better ways to move volunteer monitoring programs into the mainstream. Interactive skill-building workshops, presentations, break-out sessions, field trips and exhibits will be offered. For registration information, contact: Volunteer Monitoring Conference, c/o Mary Crowe, Tetra Tech, 10306 Eaton Place, Suite 340, Fairfax, VA 22030, 703-385-6000, email: crowema@tetrattech-ffx.com

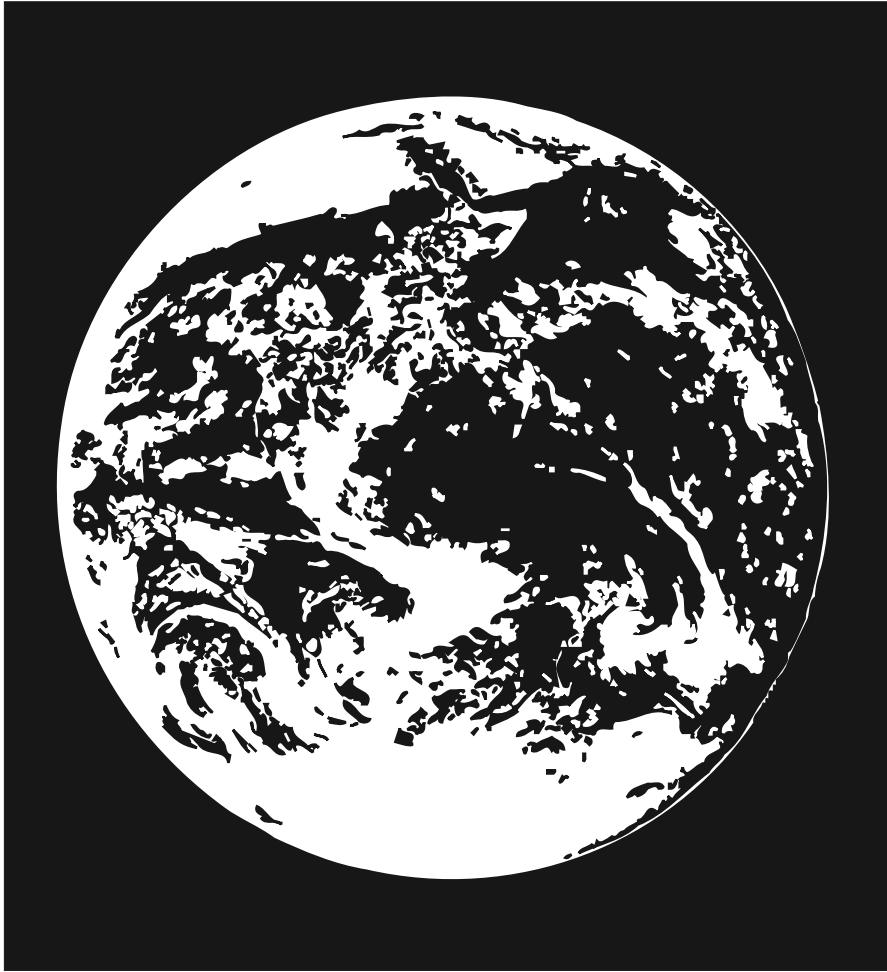
April 28-30. *Leopold Education Project Facilitator Training.* Upham Woods 4-H Environmental Education Center, Lake Delton, WI. This workshop will provide educators with the tools necessary to train new teachers to use the Leopold Education Project curriculum. Outdoor, hands-on activities based on Leopold's philosophy will provide insights into his way of thinking. DPI clock hours available. Contact: Treva Breuch, 608-238-3212, e-mail: wabreuch@students.wisc.edu for registration information about this and other Leopold Education Project workshops.

April 30–May 3. *Environmental Workshop for Girls.* Trees for Tomorrow, Eagle River, WI. Business Professional Women's (BPW) Clubs from throughout Wisconsin are seeking high school girls with an interest in the environment to participate in a 3-day natural resource seminar at Trees for Tomorrow, Eagle River. The annual event provides young women a chance to join in a variety of hands-on activities and field tours designed to add to their knowledge of resource issues and career opportunities. Scholarships for the workshop are available for girls who have a sincere interest in learning more about natural resources. Scholarships are not awarded on the basis of academic achievement. Rather, they go to girls who have an enthusiasm for the natural sciences, forestry, biology, botany, etc., and are perhaps thinking of a career in these professions.

The workshop will run from Sunday afternoon, April 30 through Wednesday afternoon, May 3. Participating BPW chapters provide full scholarships for the program, while girls who attend are responsible for their transportation to and from Eagle River and for arranging to make up for any school work that might be missed.

For more information about this program contact: Trees for Tomorrow, 1-800-838-9472 or email, trees@nnex.net

May 5-7. *Introduction to Birds and Birding.* Treehaven Field Station, Tomahawk, WI. This one-credit course covers bird observation and identification. Learn a successful and rewarding habitat approach to studying birds in the



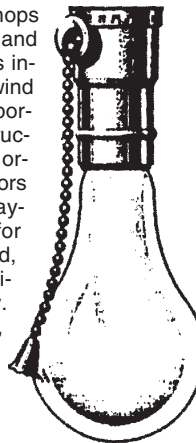
field and bush. This workshop is designed for beginning bird enthusiasts. Gain first-hand knowledge of equipment, identification, observation, field techniques and resources. Cost: \$130 for registration, room and board, tuition is extra. You make take this course without credit. For registration information, contact: Treehaven Field Station, W240 Pickerel Creek Avenue, Tomahawk, WI 54487, 715-453-4106.

May 12-14. 6:30 p.m. Friday through 1:30 p.m. Sunday. *A Wild Warbler Weekend.* Mosquito Hill Nature Center, New London, WI. Enjoy a spring weekend of birding. Events will include a warbler identification workshop, discovering central Wisconsin bird hot spots, sunrise at a bustling freshwater marsh and local bird walks in search of spring migrants. This adult program is intended for novice bird watchers, but people of any ability are welcome to join the birding activities. Cost: \$140.00, includes meals, lodging for two nights, speakers, and motor coach transportation. Registration deadline is April 14. Contact: Mosquito Hill Nature Center, N3880 Rogers Road, New London, WI 54961, 920-779-6433.

June 6. *Project Learning Tree.* Aldo Leopold Nature Center, Monona, WI. Experience PLT's hands-on environmental education activities. For more information contact: Gail Epping,

Aldo Leopold Nature Center, 300 Femrite Drive, Monona, WI 53716, 608-221-0404.

June 16-21. *Renewable Energy and Sustainable Living Fair.* Dane County Expo Center, Madison, WI. More than 100 workshops on renewable energy and sustainable living topics including solar power, wind power, alternative transportation, strawbale construction, solar cooking, and organic gardening. Exhibitors will be selling and displaying innovative products for home and business. Food, entertainment, and activities for the whole family. For more information, contact: Midwest Renewable Energy Association, 7558 Deer Rd., Custer, WI 54423, 715-592-6595, email:



June 19-23. *Birding by Habitat.* Trees for Tomorrow, Eagle River, WI. Fly into a week of north country birding designed for beginning through advanced birders. Improve your birding skills and how to teach birding to your stu-

dents. Learn the identity, songs, behaviors and field marks of birds in forests, meadows, swamps, lakes and backyards. Go owling, learn about raptors and understand the importance of habitat. Instructor: Harriet Irwin, UW Biology Instructor and Naturalist. Cost: \$240, plus UW tuition. Contact: Trees for Tomorrow, 1-800-838-9472.

July 5-7. *Woods, Wildlife and Water (Workshop for Ag-Ed Teachers).* Trees for Tomorrow, Eagle River, WI. Field studies will focus on multiple-use management of forests, and how today's decisions will affect humans, wildlife, water and soils in the future. Highlights include meeting DNR, USFS and industry foresters to gain their perspectives on multiple-use management. Canoe instruction and a half-day canoe trip in Sylvania Wilderness will follow a program on the history of the Sylvania tract. Cost: \$100 plus UW tuition (optional) one credit only. Contact: Trees for Tomorrow, 1-800-838-9472.

July 10-14. *Landscaping for Wildlife.* Trees for Tomorrow, Eagle River, WI. The pleasure of attracting wildlife can be yours as you plan ways to naturalize your backyard, school yard or community spaces. The habitat needs of wildlife are featured along with the basic principles of planning, sketching, designing and creating these habitats. Visit butterfly gardens, bird habitats, and wildlife landscapes. Take home resource materials, expert advice and lists of native plants to landscape your area. Cost: \$240, plus UW tuition. Contact: Trees for Tomorrow, 1-800-838-9472.

July 17-21. *Mushrooms and Molds.* Trees for Tomorrow, Eagle River, WI. Join U.S. Forest Service Mycologist Hal Burdsall as you learn more about dozens of species of mushrooms, both edible and poisonous. Interactive presentations will give teachers an opportunity to learn the exact role of fungi in the forest ecosystem, and how they can make this biology come alive for their students back in the classroom. Cost: \$240, tuition subsidies available for teachers who register early. Contact: Trees for Tomorrow, 1-800-838-9472. Contact: Trees for Tomorrow, 1-800-838-9472.

July 17-21. *Making the Most of Your School Forest.* Trees for Tomorrow, Eagle River, WI. Want to use your school forest, but don't know where to start? Get the information and resources you need to develop and use your school forest effectively. Field activities and visits to working school forests will give you practical ideas to use at your own school. Registration fee is covered by a Wisconsin Environmental Education Board (WEEB) Grant. A stipend is available to help cover UW tuition. Contact: Trees for Tomorrow, 1-800-838-9472.

August 10-11. *Project Learning Tree.* Seno Woodland Management, Burlington, WI. Experience PLT's hands-on environmental education activities. For more information, contact: Jerry Lapidakis, WWOA Foundation, P.O. Box 414, Stoughton, WI 53589. mreainfo@wi-net.com ♦



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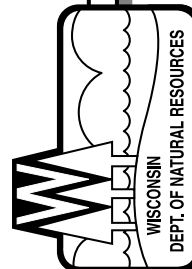
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